WEST BRIDGFORD

Urban District Council.

Annual Report

OF THE

MEDICAL OFFICER OF HEALTH,

For the Year 1898.

NOTTINGHAM:
W. WARD, PRINTER, GREYFRIAR BUILDINGS.

WEST BRIDGFORD

Urban District Council,

1898.

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REPORT

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE YEAR 1898.

Mr. Chairman and Gentlemen,

I beg to present to you my Report for the year 1898. The year was a momentous one, more so prospectively than actually, for in it your Council decided upon two most important undertakings, both of which are pregnant with interest not only to your own but to other Sanitary Authorities. The first of these was your decision to have a Water Supply of your own, independent altogether of the Nottingham Corporation Supply. As this question is at present *sub judice* I will not refer to it further.

The second question was the decision of your Council—upon the recommendation of a Special Committee appointed for the purpose—to adopt a new system of sewage disposal. From a statistical point of view the year was, as usual, a very satisfactory one, as regards the death rate, which although a trifle higher than the three previous years, was still very low. The birth-rate, which in 1897 shewed some signs of improvement, has again gone backwards, and is the lowest of any year since your district became a separate sanitary authority.

Sewage Disposal. Ever since your district had conferred upon it the power of local self-government, the system of sewage disposal has been by irrigation, necessitating a pumping station, and Sewage Farm. This system has been in operation about 10 years, and so far as getting rid of the sewage without trouble or nuisance is concerned, the work has been well done. The pumping apparatus has not once failed, the system of irrigation has improved, and the farm itself has now become a source of income, although not of profit to your Council. During the past year the crops grown upon it were the finest in the county, and fetched high prices.

The probability of the Local Government Board insisting upon your increasing the acreage of the farm, determined your Farm Committee to inquire into other and more modern methods of sewage disposal. A special committee consisting of the Chairman of your Council, the Chairman of your Sewage Farm Committee, and your Surveyor, in August last visited Sutton, in the County of Surrey, and also the town of Exeter, and at these places thoroughly inspected and investigated the latest biological systems of sewage purification and disposal. The result of this committee's experience was embodied in a Report presented to your Council dated 8th September, and at a subsequent meeting on the 7th October your Council accepted the Report, and agreed to adopt the broad principle of sewage purification as reported upon therein.

The system adopted at Sutton is somewhat different to the Exeter system. The essential feature of both methods is to encourage the growth of micro-organisms in filters which have the power of converting or "nitrifying" organic matters into harmless chemical compounds and mineral salts, and this action is so far reaching that the insoluble organic matter (sludge) is also broken up and changed into soluble compounds.

The Exeter system has in addition an arrangement to encourage the growth of other organisms which can live only in the absence of air, the effect being to hasten the putrefactive changes and to split up and render soluble the bulk of the suspended matters. This arrangement is used as a preliminary to the filters, and is carried out in what is called a "Septic Tank,"—that is, a receptacle to which air is not admitted, and into which the sewage flows in a crude state.

Although both these methods are still undergoing the test of trial under practical conditions, they have already been long enough under observation to warrant future prospects being looked upon as hopeful, and if success is ultimately assured either system, or some further improvement of either system will probably be largely adopted, and one of the most difficult questions of sanitary science will have been solved.

The Exeter plan is the one recommended by your Committee as being the most suitable for West Bridgford. It has the additional advantage of being automatic in its action, which renders the expense of labour very small.

It may interest your Council if I supplement the Committee Report by bringing before you very shortly the Information I have been able to gather on this subject down to the present time.

This information is derived from a Report on the experiments recently made at Leeds with the "Dibdin" or "Septic" tank. The Leeds Corporation visited the same works as your Committee, and were so impressed with the feasibility of the Bacteriological System, that they resolved to experiment under Mr. Dibdin's guidance, upon the Leeds sewage.

As a result of these experiments the Leeds Corporation arrived at these general conclusions :—

(1) That notwithstanding the large quantities of chemical wastes coming down the sewers, the bacterial beds purified the sewage to such an extent that it was perfectly fit to be passed into a stream very much purer than the River Aire.

(2) That the sludging up of the Tank could be largely prevented by allowing the grit to subside and

(3) That an occasional rest of a week or a fortnight enabled the bacteria in the tank to dispose of the organic portion of the sludge.

It is calculated that allowing for certain intervals of rest, about 400,000 gallons of Leeds sewage could be dealt with on one acre of filtering beds. The Leeds Corporation have resolved to put down three additional tanks to further carry on their experiments.

The amount of sewage which will require treatment at West Bridgford may be roughly taken at one-half million gallons per day, and as this is entirely domestic sewage, one acre of filter beds appear to be ample, although the Local Government Board would probably insist upon a larger acreage—say one acre to each 2000 inhabitants, especially as the Board is at present inclined to favour a further land treatment of the sewage after it leaves the bacteria beds. This question is, however, of no consequence to your Council which already possesses ample land at the Sewage Farm.

Further, the Manchester Corporation has applied to the Local Government Board for power to borrow money for the better treatment of their sewage by means of bacterial beds, and since September last they have been carrying on experiments at Davyhulme. Their estimate is that they will be able to treat one-half million gallons on each acre of beds.

These towns have been compelled to take their present action owing to the difficulty of getting land for irrigation purposes and the enormous cost involved.

Since writing the foregoing I have been favoured with a copy of a Report on "The Septic Tank System and other recent methods of Sewage Purification and Disposal," by Dr. Handford, M.O.H., to the Notts. County Council, and dated 14th January last.

At the request of his Council Dr. Handford visited the works at Exeter and Yeovil in October last, and the Sutton Works on the 22nd December. This Report is a most concise and interesting one, and the conclusions he arrived at are upon the whole very favourable. The filtrate at the Exeter Works he found clear and odourless, and the specimens he brought back with him have remained free from putrefaction.

There are several points of resemblance between Sutton and West Bridgford. Both places have already a Sewage Farm exactly the same size (18½ acres) upon a clay subsoil. The total flow in dry weather would be about the same (400,000 gallons) per day, and in both places the sewage is entirely domestic. At Sutton the effluent from the Bacteria Tank goes to fine filter beds, eight in number; six of these are quite small, and have been in use five years without re-making. Dr. Handford found the effluent from the fine filters to be clear, free from suspended particles, odourless, and it has remained free from putrefaction since then. The Sutton Works have been in operation for over two years, and have resulted in a considerable saving of money. Unlike the Exeter method, the system is not patented. Dr. Handford concludes his report on the Sutton Works as follows: "As a result of my visit to Sutton I have received a very favourable impression."

To describe in as plain language as is possible the theory of this system of sewage purification, I quote the following extract from Mr. Dibdin's book:

" If any porous material, such as coke breeze, burnt clay, " etc., be placed in a vessel or tank, and sewage water admitted " thereto, a large proportion of the filth (which is only another " name for the complex organic matter containing gelatine, " chondrine, albumen, starch, etc.) contained therein, will adhere " to the rough sides of the coke or other material ; and the organisms, whether known as bacilli, micrococci, etc., will commence their work by feeding and multiplying, so that in a short " time the whole surface of each particle of coke, or other " material which may be employed, will be covered by them. Let " the water be drawn off gently, after sufficient time has been " allowed for the adherence of the fine particles of matter to the " coke. Air will be admitted as the water is lowered, and a fresh " impetus will be given to the little workers, who will soon be " ready for another supply of food to be given them in the form " of a second quantity of foul water. It will be at once seen that " if the supply of air and food is maintained regularly, and at " proper intervals, these processes may continue indefinitely, and " that we can bring about the destruction of the objectionable " matters completely and economically for as long a time as may " be desired."

Scavenging.—The scavenging of the Parish has been done satisfactorily, and there are now very few complaints with regard to the emptying of ashpits. The Contractor has not kept a record of the number of loads, but he has promised to do so in future. During the year the following work was done :—

Privies and Ashpits emptied	..	1103
Tub Closets and Ashbins	..	82 per week.

There are now only 21 cesspools in the parish, and these are emptied regularly. The sooner these are abolished the better. Some of the ashpits are very deep. The Contractor has pointed these out to your Surveyor, who should be instructed to have them filled up in accordance with your bye-laws, as they are not only difficult to empty, but they are dangerous to health. In warm weather they are an undoubted nuisance. I would advise that in future all new buildings should have either an indoor w.c. or an out-door waste water closet, and be provided with dry-ash bins which could be emptied weekly.

Many of those objectionable ashpits and privies were in use before your Council took over the sanitary administration of the district, but your Council should see that it is not responsible for the further perpetuation of a system which is highly objectionable and very expensive.

My enquiries lead me to believe that the waste water closets continue to give satisfaction. There were 143 of these erected in the parish during the year. It must be remembered that these closets, like indoor w.c.'s, are intended for human excreta only, and that no rubbish or waste material should be thrown into them. May I again impress upon your Council the advisability of recognising only those closets which are provided with an efficient "tipper." Scavenging takes place between the hours of 9.30 p.m. and 6.30 a.m. Dry ashes are collected between the hours of 9 a.m. and 4 p.m. The inhabitants are strongly requested to take advantage of the Bell-cart for getting rid of their refuse, such as tin pans, bottles and the like. This cart goes round the parish on every alternate Monday.

Sewers. These were regularly flushed during the year, and especially during the warm weather. The sewer in William Road has been a frequent source of complaint. It is ventilated at the bend where this road joins Patrick Road, and when the wind is westerly an offensive smell is detected by the inhabitants of two houses in William Road, immediately opposite to the sewer ventilator. It penetrates into the houses. Your Council has endeavoured to get a ventilating shaft erected which would permit of the closure of the opening into the sewer, but not successfully, owing to the aversion property-owners have to these shafts being affixed to the gable ends of their houses. I have therefore advised your Health Committee to have this ventilator closed, but before doing this a further effort is being made to get a shaft erected. Recent investigations tend to throw doubt upon the wisdom of ventilating sewers. The following facts bear upon this question and may interest your Council. In the city of Bristol, including the suburb of Clifton, the sewers are entirely unventilated. It has been recently shewn that deaths from those diseases generally associated with sewer-gas, such as diphtheria, diarrhœa and fever are lower than in other towns with well ventilated sewers. The death-rate from all causes is remarkably low in Bristol, and more so in Clifton, which contain many working men's houses. Croydon, which has the lowest death-rate of the 33 great towns in the kingdom, has well-ventilated sewers. Contrasted with Croydon, Clifton has a lower general death-rate. For fever, Croydon and Bristol are the same, while Clifton is much lower. For diphtheria the rate at Croydon (well-ventilated sewers) is more than double that of Bristol, and five times as great as that of Clifton (unventilated sewers). Fatal diarrhœa is about the same in Bristol and Croydon.

Sewer-gas will not be forced back into dwellings if the house drain is properly constructed. This ought to be the case in a new district like West Bridgford, and a strict watch should be kept on the house drains, to see that they are properly laid, trapped, and connected. Your Health Committee recently approved of the advice of your Surveyor, that in future all house drains should be submitted to the water test before being passed.

In spite of the experience of Bristol and Clifton one would feel safer living in a district with well ventilated sewers, than in a district where owing to want of ventilation the sewer-gas is either bottled up, or escapes by accidental openings.

Gas and Lighting.—During the past year very considerable extensions of gas mains have been laid throughout the district, the total addition amounting to a little less than two miles, the bulk of which has been absorbed by the Lady Bay Estate.

The total number of consumers now amounts to about 1,090, 130 of which have been added during the year. The total number of public lamps now amounts to 162, of which there have been 24 new lamps added during the year.

The Council has not yet taken up any of the larger burners now being used with great success in many parts of Nottingham, especially for lighting the corners of cross streets and other places where something more than the ordinary light is required,

Water Supply. During the year there has been considerable extension of mains. At the present time water is supplied to 1,300 houses, and pipes are laid to supply a further 800.

Infectious Diseases. 28 cases were notified to me during the year—20 of scarlet fever, 3 of diphtheria, and 6 of typhoid fever. The scarlet fever cases affected 10 families or households. Of the 3 cases of diphtheria, two occured in one family. The typhoid cases could not be traced to any special or common cause, although one case was probably the result of infection contracted while nursing a case of the same disease. One of the scarlet fever cases was sent for treatment to the Basford Sanatorium. The privilege which your Council has secured to the inhabitants of West Bridgford, of sending patients to this Sanatorium will, notwithstanding the expense, be a source of grateful satisfaction, while every assurance can be given that anyone sent there will be treated with care and kindness. The charge is one guinea per week for each patient. Patients are removed in a covered carriage at a cost of six shillings.

In cases of infectious diseases notified to me, preventative and precautionary measures are steadily pursued. These involve visits by myself to the infected houses, and where necessary, the giving of advice as to measures for preventing the spread of the disease, including notification to the Schools, and prohibiting attendance by children from infected houses. On receipt of a medical certificate that infection is at an end, the infected room or house is fumigated, and all bedding, clothing, &c., are removed to Bagthorpe for disinfection by heat.

The cost for the year was £7 10s.

The medical fees paid for notifying amounted to £2 2s.

There was no epidemic of measles during the year, if we exclude the tail end of one during the first few weeks of 1898. During the last quarter of 1898, this disease was very prevalent in the Meadows district of Nottingham, while West Bridgford, separated by the Trent only, escaped entirely. This was, I think, due to the fact that there is little or no communication between the children of West Bridgford who attend school, and the children who attend the public schools in the Meadows. Public or Board Schools are the great disseminators of measles, and the absence of association between the scholars of the two districts, saved your parish from an outbreak.

Population.—At Midsummer, 1898, there were according to the Rate Book 1216 houses in occupation. This is an increase of 116 houses as compared with the same period of 1897. For comparison I give you the following Table shewing the continuous growth of the Parish.

Midsummer	1894	Houses	occupied	749
,,	1895	,,	,,	855
,,	1896	,,	,,	965
,,	1897	,,	,,	1100
,,	1898	,,	,,	1216

The increase between Midsummer 1898 and 1897 is not quite so great as between 1897 and 1896, but still the growth is quite satisfactory, and shews the continued popularity of West Bridgford as a residential district.

The number of houses at present in course of erection is 80, of these 38 are on the Lady Bay Estate. Building operations at the present time show an increase over the corresponding period of last year. Reckoning 4¾ inhabitants to each house, as shewn by the last Census, the population at last Midsummer would be approximately 5,776. and it is on this figure that I base my vital statistics. This gives an increase of 551 for the year.

Vital Statistics.--Deaths.—52 deaths were registered during the year, 29 males and 23 females, as compared with a total of 43 deaths during the previous year.

10	deaths	occured	during	the	1st	quarter.
17	,,	,,	,,	,,	2nd	,,
11	,,	,,	,,	,,	3rd	,.
14	,,	,,	,,	,,	4th	,,

The death-rate is 9 per 1,000.

As shewing the extraordinary low death-rate in West Bridgford I give you the following table for the last five years.

1894	death-rate	10·8	Nottingham	17·
1895	,,	7·8	,,	18·9
1896	,,	8·9	,,	17·2
1897	,,	8·2	,,	18·8
1898	,,	9·	,,	17·7

Of the total deaths (52) 14 were infants under one year of age—17 were over 60 years of age—9 were over 70 years, and 3 were over 80 years of age.

Of the infants, 3 died from diarrhoea, 6 from convulsions, and 5 from congenital debility.

Of the adults there were four deaths from consumption, 7 deaths from diseases of the Respiratory Organs (other than consumption), 3 died of heart disease, 4 of cancer, and there was one death from enteric fever. There were no deaths from scarlet fever, measles, or diphtheria. There were 3 uncertified deaths. One inquest was held.

BIRTHS. 101 births were registered in 1898 as compared with 128 children born during 1897. The birth rate is 17·5 per 1000. I append the following table for comparison.

1894	Birth-rate	25·9	Nottingham	28·5
1895	,,	21·2	,,	29·7
1896	,,	20·1	,,	28·8
1897	,,	24 5	,,	28·9
1891	,,	17·5	,,	28·6

The birth-rate in West Bridgford has always been too low. For 1898 it was worse than ever.

Infant Mortality.—The deaths under one year per 1,000 births during 1898 was 138, as against 78 in the preceding year. That is, supposing 1,000 children had been born in West Bridgford during 1898, 138 of these would have died before reaching the age of one year, as against 78 who would have died during 1897.

Cemetery.—During the year 1898, 22 bodies were interred in the Parish Churchyard. In my previous reports I have referred to the necessity of your Council taking up the question of providing a new place of burial for the district.

The Nottingham Corporation has recently authorised its Public Parks and Burial Committee to purchase a piece of land about 43 acres in extent for a Cemetery for the Southern Division of the City.

It is situate in the Parish of South Wilford, on the south-east of the Loughboro' Road at its junction with the old disused turpike road, where the Loughboro' Road turns to the West. This piece of land is about half a mile from the Southern boundary of your Parish. The price of the land has, I believe, been fixed, and the agreements for the conveyancing have been completed. I would suggest as an alternative to a new Cemetery that your Council should approach the Nottingham Corporation with a view to negotiations for a joint burial ground on terms to be arranged, such terms if they include financial responsibility should also include representation by your Council on the Burial Board.

In any case the provision of some new ground for public burying is a matter of urgency, and should receive the early attention of your Council.

Meteorology. The year was a dry one—-the rainfall was 19·7 inches, which was the lowest since 1890. The average yearly rainfall for West Bridgford for the past 32 years is 25·2 inches. Rain fell on 183 days in 1898. September was the driest month ; May and June the wettest. The heaviest rainfall was on 12th April and 7th August on each of which days 7/10 of an inch of rain fell.

Temperature. The 9th and 18th September were the hottest days, the mercury registering 86½ degrees. The 5th April was the coldest day, the thermometer only registering 23 degrees Fahrenheit. As showing the variations of our climate, the thermometer stood at 67 degrees on the 9th April, a difference of forty degrees in four days.

I have to thank the members of your Council for their unvarying kindness to me, and to express my indebtedness to your Clerk, your Surveyor, and to Mr. T. C. Gray for their help and assistance.

I am, Gentlemen,
Yours obediently,
WALTER HUNTER, M.D.
Medical Officer of Health.